GA-Z97M-D3HP
GA-H97M-D3HP

User's Manual

Rev. 1001

12ME-Z97M3HP-1001R

GA-Z97M-D3HP

GA-H97M-D3HP

Declaration of Conformity

We, Manufacturer/Importer,

G.B.T. Technology Trading GMbH

Address: Bullenkoppel 16, 22047 Hamburg, Germany

Declare that the product

Product Type: Motherboard

Product Name: GA-Z97M-D3HP
GA-H97M-D3HP

conforms with the essential requirements of the following directives:

☒ **2004/108/EC EMC Directive:**

☒ Conduction & Radiated Emissions:	EN 55022:2010
☒ Immunity:	EN 55024:2010
☒ Power-line harmonics:	EN 61000-3-2:2006+A2:2009
☒ Power-line flicker:	EN 61000-3-3:2008

☒ **2006/95/EC LVD Directive**

☒ Safety:	EN60950-1:2006+A12:2011

☒ **2011/65/EU RoHS Directive**

☒ Restriction of use of certain substances in electronic equipment:	This product does not contain any of the restricted substances listed in Annex II, in concentrations and applications banned by the directive.

☒ **CE marking**

CE

Signature: Timmy Huang

(Stamp) Date: Sept. 19, 2014 Name: Timmy Huang

DECLARATION OF CONFORMITY

Per FCC Part 2 Section 2.1077(a)

FC

Responsible Party Name: G.B.T. INC. (U.S.A.)

Address: 17358 Railroad Street
City of Industry, CA 91748

Phone/Fax No: (626) 854-9338/ (626) 854-9326

hereby declares that the product

Product Name: Motherboard

Model Number: GA-Z97M-D3HP
GA-H97M-D3HP

Conforms to the following specifications:

FCC Part 15, Subpart B, Section 15.107(a) and Section 15.109 (a),Class B Digital Device

Supplementary Information:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful and (2) this device must accept any inference received, including that may cause undesired operation.

Representative Person's Name: ERIC LU

Signature: Eric Lu

Date: Sept. 19, 2014

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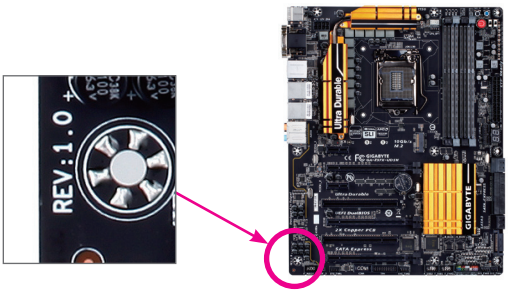
- In order to assist in the use of this product, carefully read the User's Manual.
- For product-related information, check on our website at: http://www.gigabyte.com

Identifying Your Motherboard Revision

The revision number on your motherboard looks like this: "REV: X.X." For example, "REV: 1.0" means the revision of the motherboard is 1.0. Check your motherboard revision before updating motherboard BIOS, drivers, or when looking for technical information.

Example:



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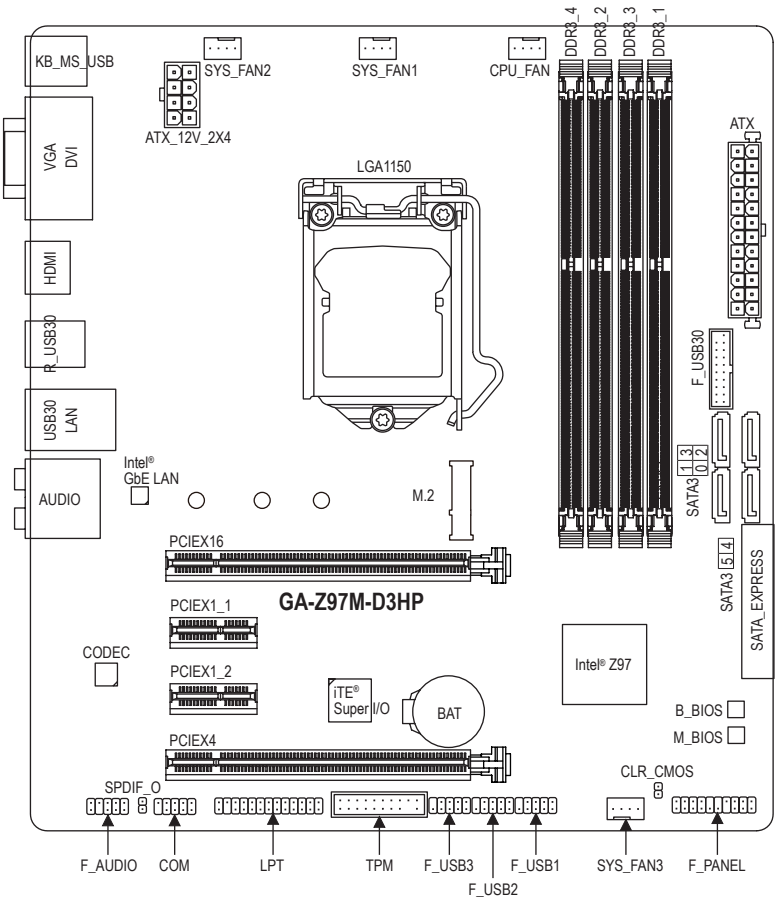
GA-Z97M-D3HP Motherboard Layout

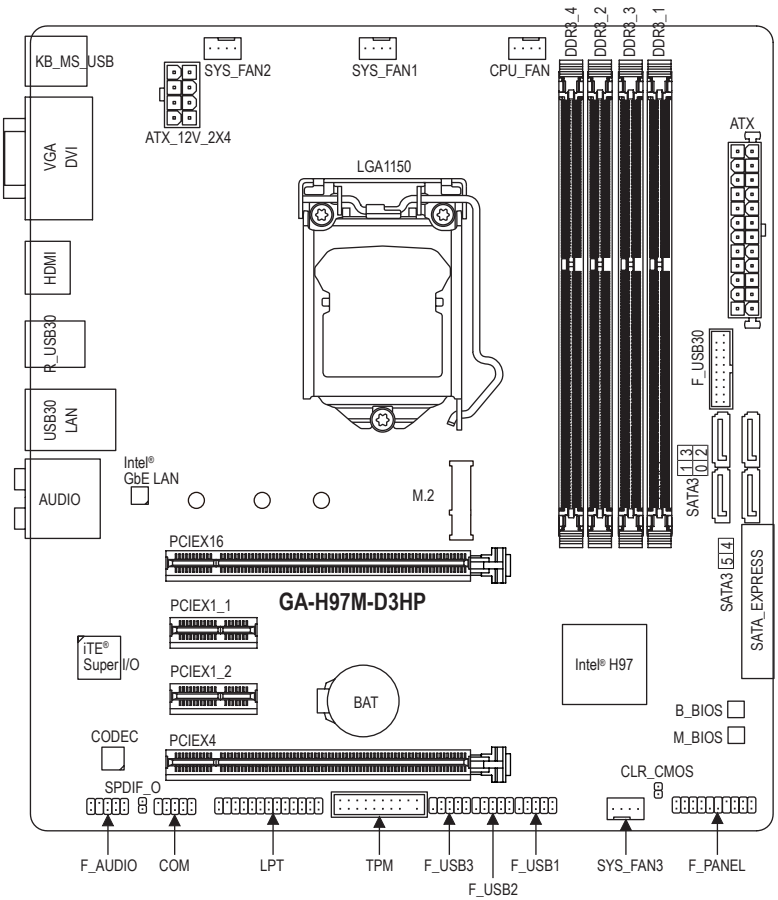


Box Contents

- ☑ GA-Z97M-D3HP motherboard
- ☑ Motherboard driver disk
- ☑ User's Manual
- ☑ Two SATA cables
- ☑ I/O Shield

The box contents above are for reference only and the actual items shall depend on the product package you obtain. The box contents are subject to change without notice.

GA-H97M-D3HP Motherboard Layout

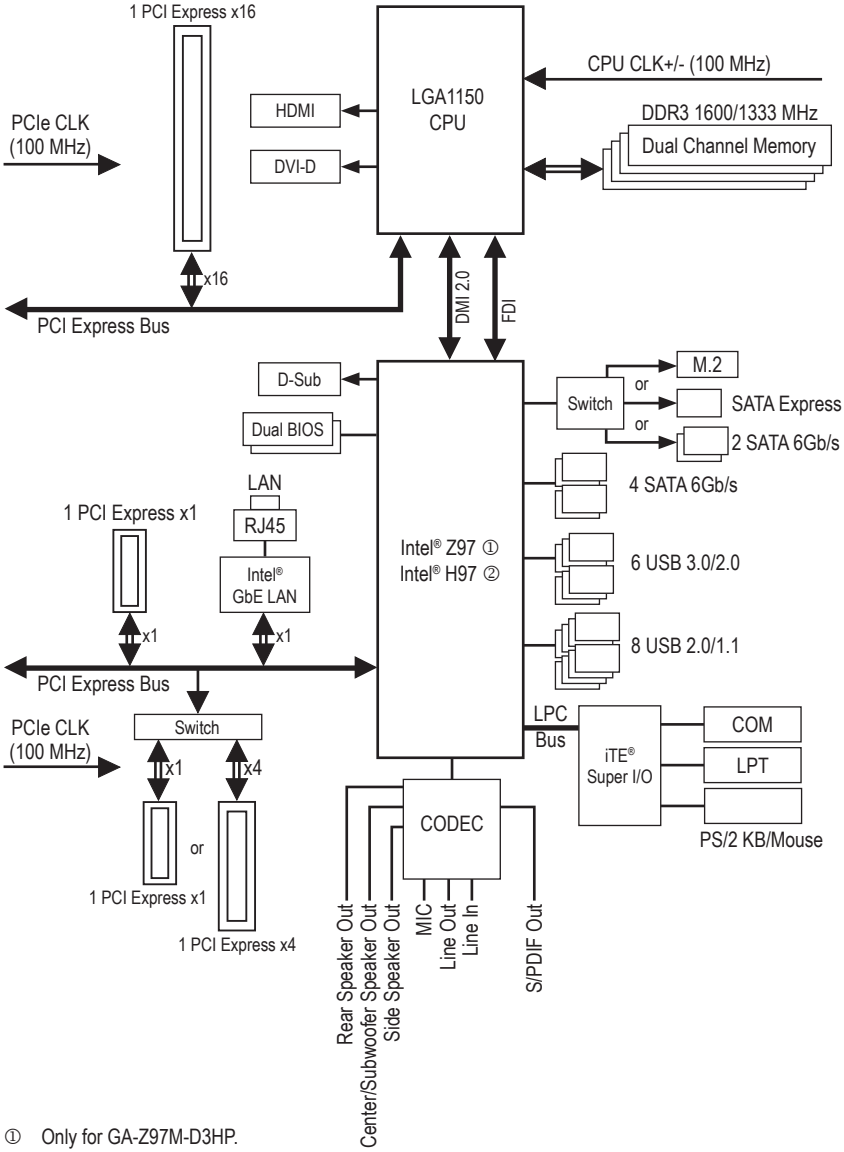


Box Contents

- ☑ GA-H97M-D3HP motherboard
- ☑ Motherboard driver disk
- ☑ User's Manual
- ☑ Two SATA cables
- ☑ I/O Shield

The box contents above are for reference only and the actual items shall depend on the product package you obtain. The box contents are subject to change without notice.

GA-Z97M-D3HP/GA-H97M-D3HP Motherboard Block Diagram



① Only for GA-Z97M-D3HP.
② Only for GA-H97M-D3HP.

For detailed product information/limitation(s), refer to "1-2 Product Specifications."

Chapter 1 Hardware Installation

1-1 Installation Precautions

The motherboard contains numerous delicate electronic circuits and components which can become damaged as a result of electrostatic discharge (ESD). Prior to installation, carefully read the user's manual and follow these procedures:

- Prior to installation, make sure the chassis is suitable for the motherboard.
- Prior to installation, do not remove or break motherboard S/N (Serial Number) sticker or warranty sticker provided by your dealer. These stickers are required for warranty validation.
- Always remove the AC power by unplugging the power cord from the power outlet before installing or removing the motherboard or other hardware components.
- When connecting hardware components to the internal connectors on the motherboard, make sure they are connected tightly and securely.
- When handling the motherboard, avoid touching any metal leads or connectors.
- It is best to wear an electrostatic discharge (ESD) wrist strap when handling electronic components such as a motherboard, CPU or memory. If you do not have an ESD wrist strap, keep your hands dry and first touch a metal object to eliminate static electricity.
- Prior to installing the motherboard, please have it on top of an antistatic pad or within an electrostatic shielding container.
- Before unplugging the power supply cable from the motherboard, make sure the power supply has been turned off.
- Before turning on the power, make sure the power supply voltage has been set according to the local voltage standard.
- Before using the product, please verify that all cables and power connectors of your hardware components are connected.
- To prevent damage to the motherboard, do not allow screws to come in contact with the motherboard circuit or its components.
- Make sure there are no leftover screws or metal components placed on the motherboard or within the computer casing.
- Do not place the computer system on an uneven surface.
- Do not place the computer system in a high-temperature environment.
- Turning on the computer power during the installation process can lead to damage to system components as well as physical harm to the user.
- If you are uncertain about any installation steps or have a problem related to the use of the product, please consult a certified computer technician.

1-2 Product Specifications

CPU	◆	Support for Intel® Core™ i7 processors/Intel® Core™ i5 processors/ Intel® Core™ i3 processors/Intel® Pentium® processors/ Intel® Celeron® processors in the LGA1150 package (Go to GIGABYTE's website for the latest CPU support list.) ◆ L3 cache varies with CPU
Chipset	◆	Intel® Z97①/H97② Express Chipset
Memory	◆	4 x DDR3 DIMM sockets supporting up to 32 GB of system memory * Due to a Windows 32-bit operating system limitation, when more than 4 GB of physical memory is installed, the actual memory size displayed will be less than the size of the physical memory installed. ◆ Dual channel memory architecture ◆ Support for DDR3 1600/1333 MHz memory modules ◆ Support for non-ECC memory modules ◆ Support for Extreme Memory Profile (XMP) memory modules (Go to GIGABYTE's website for the latest supported memory speeds and memory modules.)
Onboard Graphics	◆	Integrated Graphics Processor: - 1 x D-Sub port, supporting a maximum resolution of 1920x1200@60Hz - 1 x DVI-D port, supporting a maximum resolution of 1920x1200@60Hz * The DVI-D port does not support D-Sub connection by adapter. - 1 x HDMI port, supporting a maximum resolution of 4096x2160@24Hz or 2560x1600@60Hz * Support for HDMI 1.4a version. - Support for up to 3 displays at the same time - Maximum shared memory of 512 MB
Audio	◆	Realtek® ALC1150 codec ① ◆ Realtek® ALC892 codec ② ◆ High Definition Audio ◆ 2/4/5.1/7.1-channel ◆ Support for S/PDIF Out
LAN	◆	Intel® GbE LAN chip (10/100/1000 Mbit)
Expansion Slots	◆	1 x PCI Express x16 slot, running at x16 * For optimum performance, if only one PCI Express graphics card is to be installed, be sure to install it in the PCIEX16 slot. (The PCIEX16 slot conforms to PCI Express 3.0 standard.) ◆ 1 x PCI Express x16 slot, running at x4 (PCIEX4) ◆ 2 x PCI Express x1 slots * The PCIEX4 slot shares bandwidth with the PCIEX1_1 slot. The PCIEX1_1 slot will become unavailable when a PCIe x4 expansion card is installed. * When installing a x4 or above card in the PCIEX4 slot, make sure to set PCIE Slot Configuration (PCH) in BIOS Setup to x4. (Refer to Chapter 2, "BIOS Setup," "Peripherals," for more information.) (The PCIEX4 and PCI Express x1 slots conform to PCI Express 2.0 standard.)
Multi-Graphics Technology	◆	Support for 2-Way AMD CrossFire™ technology

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② Only for GA-H97M-D3HP.

Storage Interface	◆	Chipset: - 1 x M.2 PCIe connector - 1 x SATA Express connector - 6 x SATA 6Gb/s connectors (M.2, SATA Express, and SATA3 4/5 connectors can only be used one at a time.) - Support for RAID 0, RAID 1, RAID 5, and RAID 10
USB	◆	Chipset: - 6 x USB 3.0/2.0 ports (4 ports on the back panel, 2 ports available through the internal USB header) - 8 x USB 2.0/1.1 ports (2 ports on the back panel, 6 ports available through the internal USB headers)
Internal Connectors	◆ ◆ ◆ ◆ ◆ ◆ ◆ ◆ ◆ ◆ ◆ ◆ ◆ ◆ ◆ ◆	1 x 24-pin ATX main power connector 1 x 8-pin ATX 12V power connector 1 x M.2 PCIe connector 1 x SATA Express connector 6 x SATA 6Gb/s connectors 1 x CPU fan header 3 x system fan headers 1 x front panel header 1 x front panel audio header 1 x S/PDIF Out header 1 x USB 3.0/2.0 header 3 x USB 2.0/1.1 headers 1 x serial port header 1 x parallel port header 1 x Clear CMOS jumper 1 x Trusted Platform Module (TPM) header
Back Panel Connectors	◆ ◆ ◆ ◆ ◆ ◆ ◆ ◆	1 x PS/2 keyboard/mouse port 1 x D-Sub port 1 x DVI-D port 1 x HDMI port 4 x USB 3.0/2.0 ports 2 x USB 2.0/1.1 ports 1 x RJ-45 port 6 x audio jacks (Center/Subwoofer Speaker Out, Rear Speaker Out, Side Speaker Out, Line In, Line Out, Mic In)
I/O Controller	◆	iTE® I/O Controller Chip
Hardware Monitor	◆ ◆ ◆ ◆ ◆ ◆	System voltage detection CPU/System temperature detection CPU/System fan speed detection CPU/System overheating warning CPU/System fan fail warning CPU/System fan speed control * Whether the fan speed control function is supported will depend on the cooler you install.
BIOS	◆ ◆ ◆ ◆	2 x 64 Mbit flash Use of licensed AMI UEFI BIOS Support for DualBIOS™ PnP 1.0a, DMI 2.7, WfM 2.0, SM BIOS 2.7, ACPI 5.0

Unique Features	◆	Support for APP Center * Available applications in APP Center may differ by motherboard model. Supported functions of each application may also differ depending on motherboard specifications. - @BIOS - EasyTune - EZ Setup - Fast Boot - ON/OFF Charge - Smart TimeLock - Smart Recovery 2 - System Information Viewer - USB Blocker ◆ Support for Q-Flash ◆ Support for Smart Switch ◆ Support for Xpress Install
Bundled Software	◆	Norton® Internet Security (OEM version) ◆ Intel® Rapid Start Technology ◆ Intel® Smart Connect Technology ◆ Intel® Smart Response Technology ◆ Intel® Small Business Advantage ② ◆ cFosSpeed ①
Operating System	◆	Support for Windows 8.1/8/7
Form Factor	◆	Micro ATX Form Factor; 24.4cm x 22.5cm

* GIGABYTE reserves the right to make any changes to the product specifications and product-related information without prior notice.

* Please visit the **Support & Downloads\Utility** page on GIGABYTE's website to check the supported operating system(s) for the software listed in the "Unique Features" and "Bundled Software" columns.

1-3 Installing the CPU

Read the following guidelines before you begin to install the CPU:

- Make sure that the motherboard supports the CPU.
  (Go to GIGABYTE's website for the latest CPU support list.)
- Always turn off the computer and unplug the power cord from the power outlet before installing the CPU to prevent hardware damage.
- Locate the pin one of the CPU. The CPU cannot be inserted if oriented incorrectly. (Or you may locate the notches on both sides of the CPU and alignment keys on the CPU socket.)
- Apply an even and thin layer of thermal grease on the surface of the CPU.
- Do not turn on the computer if the CPU cooler is not installed, otherwise overheating and damage of the CPU may occur.
- Set the CPU host frequency in accordance with the CPU specifications. It is not recommended that the system bus frequency be set beyond hardware specifications since it does not meet the standard requirements for the peripherals. If you wish to set the frequency beyond the standard specifications, please do so according to your hardware specifications including the CPU, graphics card, memory, hard drive, etc.

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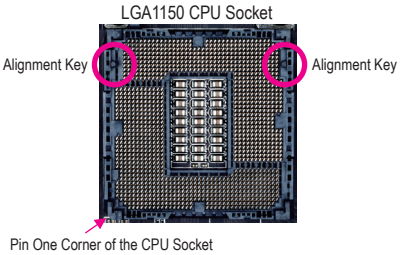
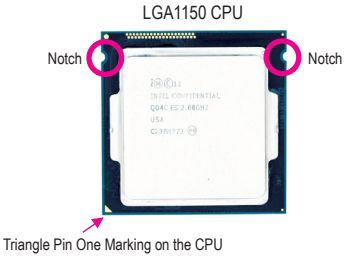
② Only for GA-H97M-D3HP.

Installing the CPU

Locate the alignment keys on the motherboard CPU socket and the notches on the CPU.





Do not remove the CPU socket cover before inserting the CPU. It may pop off from the load plate automatically during the process of re-engaging the lever after you insert the CPU.

1-4 Installing the Memory

Read the following guidelines before you begin to install the memory:

- Make sure that the motherboard supports the memory. It is recommended that memory of the same capacity, brand, speed, and chips be used.
  (Go to GIGABYTE's website for the latest supported memory speeds and memory modules.)
- Always turn off the computer and unplug the power cord from the power outlet before installing the memory to prevent hardware damage.
- Memory modules have a foolproof design. A memory module can be installed in only one direction. If you are unable to insert the memory, switch the direction.

Dual Channel Memory Configuration

This motherboard provides four DDR3 memory sockets and supports Dual Channel Technology. After the memory is installed, the BIOS will automatically detect the specifications and capacity of the memory. Enabling Dual Channel memory mode will double the original memory bandwidth.

The four DDR3 memory sockets are divided into two channels and each channel has two memory sockets as following:

- Channel A: DDR3_2, DDR3_4
- Channel B: DDR3_1, DDR3_3

Due to CPU limitations, read the following guidelines before installing the memory in Dual Channel mode.

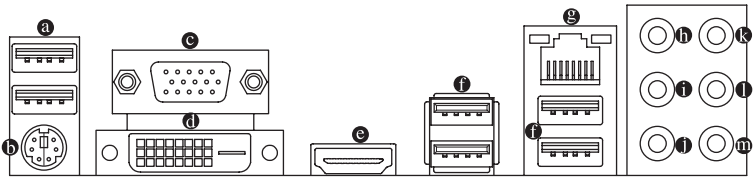
1. Dual Channel mode cannot be enabled if only one DDR3 memory module is installed.
2. When enabling Dual Channel mode with two or four memory modules, it is recommended that memory of the same capacity, brand, speed, and chips be used and installed in the same colored DDR3 sockets. For optimum performance, when enabling Dual Channel mode with two memory modules, we recommend that you install them in the DDR3_1 and DDR3_2 sockets.

1-5 Installing an Expansion Card

Read the following guidelines before you begin to install an expansion card:

- Make sure the motherboard supports the expansion card. Carefully read the manual that came with your expansion card.
- Always turn off the computer and unplug the power cord from the power outlet before installing an expansion card to prevent hardware damage.

1-6 Back Panel Connectors



ⓐ USB 2.0/1.1 Port

The USB port supports the USB 2.0/1.1 specification. Use this port for USB devices such as a USB keyboard/mouse, USB printer, USB flash drive and etc.

ⓑ PS/2 Keyboard/Mouse Port

Use this port to connect a PS/2 mouse or keyboard.

ⓒ D-Sub Port

The D-Sub port supports a 15-pin D-Sub connector and supports a maximum resolution of 1920x1200@60Hz (the actual resolutions supported depend on the monitor being used). Connect a monitor that supports D-Sub connection to this port.

ⓓ DVI-D Port (Note)

The DVI-D port conforms to the DVI-D specification and supports a maximum resolution of 1920x1200@60Hz (the actual resolutions supported depend on the monitor being used). Connect a monitor that supports DVI-D connection to this port.

ⓔ HDMI Port

HDMI™ HIGH-DEFINITION MULTIMEDIA INTERFACE The HDMI port is HDCP compliant and supports Dolby True HD and DTS HD Master Audio formats. It also supports up to 192KHz/24bit 8-channel LPCM audio output. You can use this port to connect your HDMI-supported monitor. The maximum supported resolution is 4096x2160@24Hz or 2560x1600@60Hz, but the actual resolutions supported are dependent on the monitor being used.

After installing the HDMI device, make sure to set the default sound playback device to HDMI.

Triple-Display Configurations for the Onboard Graphics:

Triple-display configurations are supported after you install motherboard drivers in OS. Only dual-display configurations are supported during the BIOS Setup or POST process.

ⓕ USB 3.0/2.0 Port

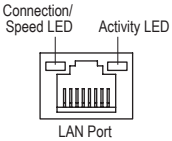
The USB 3.0 port supports the USB 3.0 specification and is compatible to the USB 2.0/1.1 specification. Use this port for USB devices such as a USB keyboard/mouse, USB printer, USB flash drive and etc.

(Note) The DVI-D port does not support D-Sub connection by adapter.

- When removing the cable connected to a back panel connector, first remove the cable from your device and then remove it from the motherboard.
- When removing the cable, pull it straight out from the connector. Do not rock it side to side to prevent an electrical short inside the cable connector.

ⓖ RJ-45 LAN Port

The Gigabit Ethernet LAN port provides Internet connection at up to 1 Gbps data rate. The following describes the states of the LAN port LEDs.



Connection/Speed LED:

State	Description
Orange	1 Gbps data rate
Green	100 Mbps data rate
Off	10 Mbps data rate

Activity LED:

State	Description
Blinking	Data transmission or receiving is occurring
On	No data transmission or receiving is occurring

ⓗ Center/Subwoofer Speaker Out Jack (Orange)

Use this audio jack to connect center/subwoofer speakers in a 5.1/7.1-channel audio configuration.

ⓘ Rear Speaker Out Jack (Black)

This jack can be used to connect front speakers in a 4/5.1/7.1-channel audio configuration.

ⓙ Side Speaker Out Jack (Gray)

Use this audio jack to connect side speakers in a 7.1-channel audio configuration.

ⓚ Line In Jack (Blue)

The line in jack. Use this audio jack for line in devices such as an optical drive, walkman, etc.

ⓛ Line Out Jack (Green)①

The line out jack. This jack supports audio amplifying function. For better sound quality, it is recommended that you connect your headphone/speaker to this jack (actual effects may vary by the device being used). Use this audio jack for a headphone or 2-channel speaker. This jack can be used to connect front speakers in a 4/5.1/7.1-channel audio configuration.

ⓛ Line Out Jack (Green)②

The line out jack. Use this audio jack for a headphone or 2-channel speaker. This jack can be used to connect front speakers in a 4/5.1/7.1-channel audio configuration.

ⓜ Mic In Jack (Pink)

The Mic in jack. Microphones must be connected to this jack.

The audio jacks can be reconfigured to perform different functions via the audio software (supported functions may vary based on hardware specification). Only microphones still MUST be connected to the default Mic in jack.

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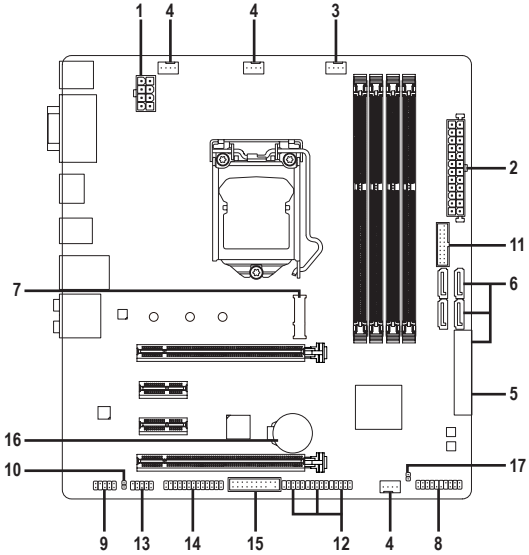
② Only for GA-H97M-D3HP.

1-7 Internal Connectors



1)	ATX_12V_2X4	10)	SPDIF_O
2)	ATX	11)	F_USB30
3)	CPU_FAN	12)	F_USB1/F_USB2/F_USB3
4)	SYS_FAN1/2/3	13)	COM
5)	SATA_EXPRESS	14)	LPT
6)	SATA3 0/1/2/3/4/5	15)	TPM
7)	M.2	16)	BAT
8)	F_PANEL	17)	CLR_CMOS
9)	F_AUDIO		

Read the following guidelines before connecting external devices:

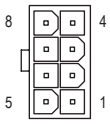
- First make sure your devices are compliant with the connectors you wish to connect.
- Before installing the devices, be sure to turn off the devices and your computer. Unplug the power cord from the power outlet to prevent damage to the devices.
- After installing the device and before turning on the computer, make sure the device cable has been securely attached to the connector on the motherboard.

1/2) ATX_12V_2X4/ATX (2x4 12V Power Connector and 2x12 Main Power Connector)

With the use of the power connector, the power supply can supply enough stable power to all the components on the motherboard. Before connecting the power connector, first make sure the power supply is turned off and all devices are properly installed. The power connector possesses a foolproof design. Connect the power supply cable to the power connector in the correct orientation.

The 12V power connector mainly supplies power to the CPU. If the 12V power connector is not connected, the computer will not start.

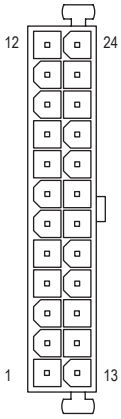
To meet expansion requirements, it is recommended that a power supply that can withstand high power consumption be used (500W or greater). If a power supply is used that does not provide the required power, the result can lead to an unstable or unbootable system.



ATX_12V_2X4

ATX_12V_2X4:

Pin No.	Definition	Pin No.	Definition
1	GND (Only for 2x4-pin 12V)	5	+12V (Only for 2x4-pin 12V)
2	GND (Only for 2x4-pin 12V)	6	+12V (Only for 2x4-pin 12V)
3	GND	7	+12V
4	GND	8	+12V



ATX

ATX:

Pin No.	Definition	Pin No.	Definition
1	3.3V	13	3.3V
2	3.3V	14	-12V
3	GND	15	GND
4	+5V	16	PS_ON (soft On/Off)
5	GND	17	GND
6	+5V	18	GND
7	GND	19	GND
8	Power Good	20	-5V
9	5VSB (stand by +5V)	21	+5V
10	+12V	22	+5V
11	+12V (Only for 2x12-pin ATX)	23	+5V (Only for 2x12-pin ATX)
12	3.3V (Only for 2x12-pin ATX)	24	GND (Only for 2x12-pin ATX)

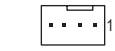
3/4) CPU_FAN/SYS_FAN1/SYS_FAN2/SYS_FAN3 (Fan Headers)

All fan headers on this motherboard are 4-pin. Most fan headers possess a foolproof insertion design. When connecting a fan cable, be sure to connect it in the correct orientation (the black connector wire is the ground wire). The speed control function requires the use of a fan with fan speed control design. For optimum heat dissipation, it is recommended that a system fan be installed inside the chassis.

CPU_FAN

CPU_FAN:

Pin No.	Definition
1	GND
2	+12V
3	Sense
4	Speed Control



SYS_FAN1/SYS_FAN2

SYS_FAN3

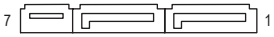
SYS_FAN1/SYS_FAN2/SYS_FAN3:

Pin No.	Definition
1	GND
2	+12V/Speed Control
3	Sense
4	VCC

- Be sure to connect fan cables to the fan headers to prevent your CPU and system from overheating. Overheating may result in damage to the CPU or the system may hang.
- These fan headers are not configuration jumper blocks. Do not place a jumper cap on the headers.

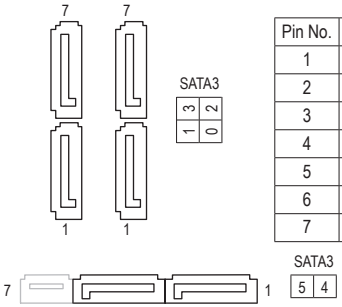
5) SATA_EXPRESS (SATA Express Connector)

The SATA Express connector supports a single SATA Express device.



6) SATA3 0/1/2/3/4/5 (SATA 6Gb/s Connectors)

The SATA connectors conform to SATA 6Gb/s standard and are compatible with SATA 3Gb/s and SATA 1.5Gb/s standard. Each SATA connector supports a single SATA device. The Intel® Chipset supports RAID 0, RAID 1, RAID 5, and RAID 10. Refer to Chapter 3, "Configuring SATA Hard Drive(s)," for instructions on configuring a RAID array.



Pin No.	Definition
1	GND
2	TXP
3	TXN
4	GND
5	RXN
6	RXP
7	GND

- A RAID 0 or RAID 1 configuration requires at least two hard drives. If more than two hard drives are to be used, the total number of hard drives must be an even number.
- A RAID 5 configuration requires at least three hard drives. (The total number of hard drives does not have to be an even number.)
- A RAID 10 configuration requires four hard drives.
- To enable hot-plugging for the SATA ports, refer to Chapter 2, "BIOS Setup," "Peripherals\SATA Configuration," for more information.

7) M.2 (M.2 Connector)

You can insert an M.2 SSD into this connector.

Follow the steps below to correctly install an M.2 SSD in the M.2 connector.

Step 1:

Use a screw driver to unfasten the screw and nut from the motherboard. Locate the proper mounting hole for the M.2 SSD to be installed and then screw the nut first.

Step 2:

Slide the M.2 SSD into the connector at an oblique angle.

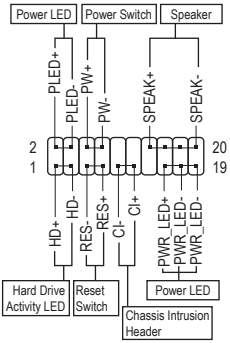
Step 3:

Press the M.2 SSD down and then secure it with the screw.

- On the motherboard there are three length adjustment holes for the M.2 SSD. Select the proper hole for the M.2 SSD to be installed and refasten the screw and nut.
- M.2, SATA Express, and SATA3 4/5 connectors can only be used one at a time.

8) F_PANEL (Front Panel Header)

Connect the power switch, reset switch, speaker, chassis intrusion switch/sensor and system status indicator on the chassis to this header according to the pin assignments below. Note the positive and negative pins before connecting the cables.



- **PLED/PWR_LED** (Power LED):

System Status	LED
S0	On
S3/S4/S5	Off

Connects to the power status indicator on the chassis front panel. The LED is on when the system is operating. The LED is off when the system is in S3/S4 sleep state or powered off (S5).

- **PW** (Power Switch):
  Connects to the power switch on the chassis front panel. You may configure the way to turn off your system using the power switch (refer to Chapter 2, "BIOS Setup," "Power Management," for more information).
- **SPEAK** (Speaker):
  Connects to the speaker on the chassis front panel. The system reports system startup status by issuing a beep code. One single short beep will be heard if no problem is detected at system startup.
- **HD** (Hard Drive Activity LED):
  Connects to the hard drive activity LED on the chassis front panel. The LED is on when the hard drive is reading or writing data.
- **RES** (Reset Switch):
  Connects to the reset switch on the chassis front panel. Press the reset switch to restart the computer if the computer freezes and fails to perform a normal restart.
- **CI** (Chassis Intrusion Header):
  Connects to the chassis intrusion switch/sensor on the chassis that can detect if the chassis cover has been removed. This function requires a chassis with a chassis intrusion switch/sensor.

The front panel design may differ by chassis. A front panel module mainly consists of power switch, reset switch, power LED, hard drive activity LED, speaker and etc. When connecting your chassis front panel module to this header, make sure the wire assignments and the pin assignments are matched correctly.

9) F_AUDIO (Front Panel Audio Header)

The front panel audio header supports Intel High Definition audio (HD) and AC'97 audio. You may connect your chassis front panel audio module to this header. Make sure the wire assignments of the module connector match the pin assignments of the motherboard header. Incorrect connection between the module connector and the motherboard header will make the device unable to work or even damage it.

For HD Front Panel Audio:

Pin No.	Definition
1	MIC2_L
2	GND
3	MIC2_R
4	-ACZ_DET
5	LINE2_R
6	Sense
7	FAUDIO_JD
8	No Pin
9	LINE2_L
10	Sense

For AC'97 Front Panel Audio:

Pin No.	Definition
1	MIC
2	GND
3	MIC Power
4	NC
5	Line Out (R)
6	NC
7	NC
8	No Pin
9	Line Out (L)
10	NC

- The front panel audio header supports HD audio by default.
- Audio signals will be present on both of the front and back panel audio connections simultaneously.
- Some chassis provide a front panel audio module that has separated connectors on each wire instead of a single plug. For information about connecting the front panel audio module that has different wire assignments, please contact the chassis manufacturer.

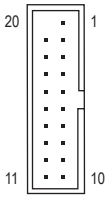
10) SPDIF_O (S/PDIF Out Header)

This header supports digital S/PDIF Out and connects a S/PDIF digital audio cable (provided by expansion cards) for digital audio output from your motherboard to certain expansion cards like graphics cards and sound cards. For example, some graphics cards may require you to use a S/PDIF digital audio cable for digital audio output from your motherboard to your graphics card if you wish to connect an HDMI display to the graphics card and have digital audio output from the HDMI display at the same time. For information about connecting the S/PDIF digital audio cable, carefully read the manual for your expansion card.

Pin No.	Definition
1	SPDIFO
2	GND

11) F_USB30 (USB 3.0/2.0 Header)

The header conforms to USB 3.0/2.0 specification and can provide two USB ports. For purchasing the optional 3.5" front panel that provides two USB 3.0/2.0 ports, please contact the local dealer.



Pin No.	Definition	Pin No.	Definition	Pin No.	Definition
1	VBUS	8	D1-	15	SSTX2-
2	SSRX1-	9	D1+	16	GND
3	SSRX1+	10	NC	17	SSRX2+
4	GND	11	D2+	18	SSRX2-
5	SSTX1-	12	D2-	19	VBUS
6	SSTX1+	13	GND	20	No Pin
7	GND	14	SSTX2+		

12) F_USB1/F_USB2/F_USB3 (USB 2.0/1.1 Headers)

The headers conform to USB 2.0/1.1 specification. Each USB header can provide two USB ports via an optional USB bracket. For purchasing the optional USB bracket, please contact the local dealer.

Pin No.	Definition	Pin No.	Definition
1	Power (5V)	6	USB DY+
2	Power (5V)	7	GND
3	USB DX-	8	GND
4	USB DY-	9	No Pin
5	USB DX+	10	NC

- Do not plug the IEEE 1394 bracket (2x5-pin) cable into the USB header.
- Prior to installing the USB bracket, be sure to turn off your computer and unplug the power cord from the power outlet to prevent damage to the USB bracket.

13) COM (Serial Port Header)

The COM header can provide one serial port via an optional COM port cable. For purchasing the optional COM port cable, please contact the local dealer.

Pin No.	Definition	Pin No.	Definition
1	NDCD-	6	NDSR-
2	NSIN	7	NRTS-
3	NSOUT	8	NCTS-
4	NDTR-	9	NRI-
5	GND	10	No Pin

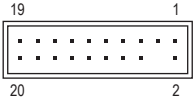
14) LPT (Parallel Port Header)

The LPT header can provide one parallel port via an optional LPT port cable. For purchasing the optional LPT port cable, please contact the local dealer.

Pin No.	Definition	Pin No.	Definition	Pin No.	Definition
1	STB-	10	GND	19	ACK-
2	AFD-	11	PD4	20	GND
3	PD0	12	GND	21	BUSY
4	ERR-	13	PD5	22	GND
5	PD1	14	GND	23	PE
6	INIT-	15	PD6	24	No Pin
7	PD2	16	GND	25	SLCT
8	SLIN-	17	PD7	26	GND
9	PD3	18	GND		

15) TPM (Trusted Platform Module Header)

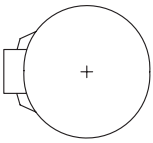
You may connect a TPM (Trusted Platform Module) to this header.



Pin No.	Definition	Pin No.	Definition	Pin No.	Definition
1	LCLK	8	LAD2	15	SB3V
2	GND	9	VCC3	16	SERIRQ
3	LFRAME	10	LAD1	17	GND
4	No Pin	11	LAD0	18	NC
5	LRESET	12	GND	19	NC
6	NC	13	NC	20	SUSCLK
7	LAD3	14	ID		

16) BAT (Battery)

The battery provides power to keep the values (such as BIOS configurations, date, and time information) in the CMOS when the computer is turned off. Replace the battery when the battery voltage drops to a low level, or the CMOS values may not be accurate or may be lost.



You may clear the CMOS values by removing the battery:

1. Turn off your computer and unplug the power cord.
2. Gently remove the battery from the battery holder and wait for one minute. (Or use a metal object like a screwdriver to touch the positive and negative terminals of the battery holder, making them short for 5 seconds.)
3. Replace the battery.
4. Plug in the power cord and restart your computer.

- Always turn off your computer and unplug the power cord before replacing the battery.
- Replace the battery with an equivalent one. Danger of explosion if the battery is replaced with an incorrect model.
- Contact the place of purchase or local dealer if you are not able to replace the battery by yourself or uncertain about the battery model.
- When installing the battery, note the orientation of the positive side (+) and the negative side (-) of the battery (the positive side should face up).
- Used batteries must be handled in accordance with local environmental regulations.

17) CLR_CMOS (Clear CMOS Jumper)

Use this jumper to clear the BIOS configuration and reset the CMOS values to factory defaults. To clear the CMOS values, use a metal object like a screwdriver to touch the two pins for a few seconds.

Open: Normal

Short: Clear CMOS Values

- Always turn off your computer and unplug the power cord from the power outlet before clearing the CMOS values.
- After system restart, go to BIOS Setup to load factory defaults (select Load Optimized Defaults) or manually configure the BIOS settings (refer to Chapter 2, "BIOS Setup," for BIOS configurations).

Chapter 2 BIOS Setup

BIOS (Basic Input and Output System) records hardware parameters of the system in the CMOS on the motherboard. Its major functions include conducting the Power-On Self-Test (POST) during system startup, saving system parameters and loading operating system, etc. BIOS includes a BIOS Setup program that allows the user to modify basic system configuration settings or to activate certain system features.
When the power is turned off, the battery on the motherboard supplies the necessary power to the CMOS to keep the configuration values in the CMOS.
To access the BIOS Setup program, press the <Delete> key during the POST when the power is turned on.
To upgrade the BIOS, use either the GIGABYTE Q-Flash or @BIOS utility.

- Q-Flash allows the user to quickly and easily upgrade or back up BIOS without entering the operating system.
- @BIOS is a Windows-based utility that searches and downloads the latest version of BIOS from the Internet and updates the BIOS.

- Because BIOS flashing is potentially risky, if you do not encounter problems using the current version of BIOS, it is recommended that you not flash the BIOS. To flash the BIOS, do it with caution. Inadequate BIOS flashing may result in system malfunction.
- It is recommended that you not alter the default settings (unless you need to) to prevent system instability or other unexpected results. Inadequately altering the settings may result in system's failure to boot. If this occurs, try to clear the CMOS values and reset the board to default values. (Refer to the "Load Optimized Defaults" section in this chapter or introductions of the battery/clear CMOS jumper in Chapter 1 for how to clear the CMOS values.)

2-1 Startup Screen

The following startup Logo screen will appear when the computer boots.
(Sample BIOS Version: GA-Z97M-D3HP E3)

There are three different BIOS modes as follows and you can use the <F2> key to switch between these modes. The Startup Guide screen (default) simplifies conventional complicated BIOS setup menus and presents only the most frequently used options in the easy-to-use interface. It helps first-time users to perform basic system setups more quickly and easily. The ST Mode (for the GA-Z97M-D3HP only) provides a fancy and user-friendly BIOS environment where users can easily point and click through various settings and make adjustments for optimum performance. Classic Setup is the conventional BIOS Setup interface where you can press the arrow keys on your keyboard to move among the items and press <Enter> to accept or enter a sub-menu. Or you can use your mouse to select the item you want.

- When the system is not stable as usual, select the **Load Optimized Defaults** item to set your system to its defaults.
- The BIOS Setup menus described in this chapter are for reference only and may differ by BIOS version.

2-2 M.I.T.

This section provides information on the BIOS version, CPU base clock, CPU frequency, memory frequency, total memory size, CPU temperature, Vcore, and memory voltage.

Whether the system will work stably with the overclock/overvoltage settings you made is dependent on your overall system configurations. Incorrectly doing overclock/overvoltage may result in damage to CPU, chipset, or memory and reduce the useful life of these components. This page is for advanced users only and we recommend you not to alter the default settings to prevent system instability or other unexpected results. (Inadequately altering the settings may result in system's failure to boot. If this occurs, clear the CMOS values and reset the board to default values.)

▶ M.I.T. Current Status

This screen provides information on CPU/memory frequencies/parameters.

▶ Advanced Frequency Settings

☞ Performance Upgrade (Note) ①

Provides you with five different overclocking configurations. Options are: 20% Upgrade, 40% Upgrade, 60% Upgrade, 80% Upgrade, 100% Upgrade. (Default: Auto)

☞ CPU Base Clock ①

Allows you to manually set the CPU base clock in 0.01 MHz increments. (Default: Auto)

Important: It is highly recommended that the CPU frequency be set in accordance with the CPU specifications.

☞ Host/PCIe Clock Frequency (Note) ①

Allows you to manually set the host clock frequency (which controls CPU, PCIe, and memory frequencies) in 0.01 MHz increments.

This item is configurable only when **CPU Base Clock** is set to **Manual**.

☞ Processor Base Clock (Gear Ratio) (Note) ①

Allows you to configure the Processor Base Clock by multiplying the **Host/PCIe Clock Frequency** by several preset host clock multipliers. This item is configurable only when **CPU Base Clock** is set to **Manual**.

☞ Spread Spectrum Control (Note) ①

Enables or disables CPU/PCIe Spread Spectrum. (Default: Auto)

This item is configurable only when **CPU Base Clock** is set to **Manual**.

① Only for GA-Z97M-D3HP.

(Note) This item is present only when you install a CPU that supports this feature. For more information about Intel® CPUs' unique features, please visit Intel's website.

☞ **Host Clock Value** ①
This value is determined by multiplying the **Host/PCIe Clock Frequency** value by the **Processor Base Clock (Gear Ratio)** value.

☞ **Processor Graphics Clock**
Allows you to set the onboard graphics clock. The adjustable range is from 400 MHz to 4000 MHz. (Default: Auto)

☞ **CPU Upgrade** (Note)
Allows you to set the CPU frequency. Options may vary depending on the CPU being used. (Default: Auto)

☞ **CPU Clock Ratio**
Allows you to alter the clock ratio for the installed CPU. The adjustable range is dependent on the CPU being installed.

☞ **CPU Frequency**
Displays the current operating CPU frequency.

▶ **Advanced CPU Core Settings**

☞ **CPU Clock Ratio, CPU Frequency**
The settings above are synchronous to those under the same items on the **Advanced Frequency Settings** menu.

☞ **K OC** (Note)
Allows for increased performance by using certain CPUs. (Default: Auto)

☞ **CPU PLL Selection**
Allows you to set the CPU PLL. **Auto** lets the BIOS automatically configure this setting. (Default: Auto)

☞ **Filter PLL Level**
Allows you to set the Filter PLL. **Auto** lets the BIOS automatically configure this setting. (Default: Auto)

☞ **Uncore Ratio**
Allows you to set the CPU Uncore ratio. The adjustable range is dependent on the CPU being used.

☞ **Uncore Frequency**
Displays the current CPU Uncore frequency.

☞ **Intel(R) Turbo Boost Technology** (Note)
Allows you to determine whether to enable the Intel CPU Turbo Boost technology. **Auto** lets the BIOS automatically configure this setting. (Default: Auto)

☞ **Turbo Ratio** (Note)
Allows you to set the CPU Turbo ratios for different number of active cores. **Auto** sets the CPU Turbo ratios according to the CPU specifications. (Default: Auto)

☞ **Turbo Power Limit (Watts)**
Allows you to set a power limit for CPU Turbo mode. When the CPU power consumption exceeds the specified power limit, the CPU will automatically reduce the core frequency in order to reduce the power. **Auto** sets the power limit according to the CPU specifications. (Default: Auto)

☞ **Core Current Limit (Amps)**
Allows you to set a current limit for CPU Turbo mode. When the CPU current exceeds the specified current limit, the CPU will automatically reduce the core frequency in order to reduce the current. **Auto** sets the power limit according to the CPU specifications. (Default: Auto)

☞ **No. of CPU Cores Enabled** (Note)
Allows you to select the number of CPU cores to enable in an Intel® multi-core CPU (the number of CPU cores may vary by CPU). **Auto** lets the BIOS automatically configure this setting. (Default: Auto)

① Only for GA-Z97M-D3HP.

(Note) This item is present only when you install a CPU that supports this feature. For more information about Intel® CPUs' unique features, please visit Intel's website.

☞ **Hyper-Threading Technology** (Note 1)

Allows you to determine whether to enable multi-threading technology when using an Intel® CPU that supports this function. This feature only works for operating systems that support multi-processor mode. **Auto** lets the BIOS automatically configure this setting. (Default: Auto)

☞ **CPU Enhanced Halt (C1E)** (Note 1)

Enables or disables Intel® CPU Enhanced Halt (C1E) function, a CPU power-saving function in system halt state. When enabled, the CPU core frequency and voltage will be reduced during system halt state to decrease power consumption. **Auto** lets the BIOS automatically configure this setting. (Default: Auto)

☞ **C3 State Support** (Note 1)

Allows you to determine whether to let the CPU enter C3 mode in system halt state. When enabled, the CPU core frequency and voltage will be reduced during system halt state to decrease power consumption. The C3 state is a more enhanced power-saving state than C1. **Auto** lets the BIOS automatically configure this setting. (Default: Auto)

☞ **C6/C7 State Support** (Note 1)

Allows you to determine whether to let the CPU enter C6/C7 mode in system halt state. When enabled, the CPU core frequency and voltage will be reduced during system halt state to decrease power consumption. The C6/C7 state is a more enhanced power-saving state than C3. **Auto** lets the BIOS automatically configure this setting. (Default: Auto)

☞ **CPU Thermal Monitor** (Note 1)

Enables or disables Intel® Thermal Monitor function, a CPU overheating protection function. When enabled, the CPU core frequency and voltage will be reduced when the CPU is overheated. **Auto** lets the BIOS automatically configure this setting. (Default: Auto)

☞ **CPU EIST Function** (Note 1)

Enables or disables Enhanced Intel® Speed Step Technology (EIST). Depending on CPU loading, Intel EIST technology can dynamically and effectively lower the CPU voltage and core frequency to decrease average power consumption and heat production. **Auto** lets the BIOS automatically configure this setting. (Default: Auto)

☞ **Extreme Memory Profile (X.M.P.)** (Note 2)

Allows the BIOS to read the SPD data on XMP memory module(s) to enhance memory performance when enabled.

- ▸▸ Disabled — Disables this function. (Default)
- ▸▸ Profile1 — Uses Profile 1 settings.
- ▸▸ Profile2 (Note 2) — Uses Profile 2 settings.

☞ **System Memory Multiplier**

Allows you to set the system memory multiplier. **Auto** sets memory multiplier according to memory SPD data. (Default: Auto)

☞ **Memory Frequency (MHz)**

The first memory frequency value is the normal operating frequency of the memory being used; the second is the memory frequency that is automatically adjusted according to the **System Memory Multiplier** settings.

▶ Advanced Memory Settings

☞ **Extreme Memory Profile (X.M.P.)** (Note 2)**, System Memory Multiplier, Memory Frequency(MHz)**

The settings above are synchronous to those under the same items on the **Advanced Frequency Settings** menu.

☞ **Memory Overclocking Profiles** (Note 2) ①

Allows you to set the memory frequency. Options may vary depending on the memory being used. (Default: Disabled)

① Only for GA-Z97M-D3HP.

(Note 1) This item is present only when you install a CPU that supports this feature. For more information about Intel® CPUs' unique features, please visit Intel's website.

(Note 2) This item is present only when you install a CPU and a memory module that support this feature.

☞ Memory Boot Mode

Provides memory detection and training methods.

- ▸▸ Auto — Lets the BIOS automatically configure this setting. (Default)
- ▸▸ Enable Fast Boot — Skip memory detection and training in some specific criteria for faster memory boot.
- ▸▸ Disable Fast Boot — Detect and train memory at every single boot.

☞ Memory Enhancement Settings

Provides three different memory performance enhancement settings: Normal (basic performance), Enhanced Stability, and Enhanced Performance. (Default: Normal)

☞ Memory Timing Mode

Manual and **Advanced Manual** allows the **Channel Interleaving**, **Rank Interleaving**, and memory timing settings below to be configurable. Options are: Auto (default), Manual, Advanced Manual.

☞ Profile DDR Voltage

When using a non-XMP memory module or **Extreme Memory Profile (X.M.P.)** is set to **Disabled**, the value is displayed according to your memory specification. When **Extreme Memory Profile (X.M.P.)** is set to **Profile1** or **Profile2**, the value is displayed according to the SPD data on the XMP memory.

☞ Channel Interleaving

Enables or disables memory channel interleaving. **Enabled** allows the system to simultaneously access different channels of the memory to increase memory performance and stability. **Auto** lets the BIOS automatically configure this setting. (Default: Auto)

☞ Rank Interleaving

Enables or disables memory rank interleaving. **Enabled** allows the system to simultaneously access different ranks of the memory to increase memory performance and stability. **Auto** lets the BIOS automatically configure this setting. (Default: Auto)

▸ Channel A/B Memory Sub Timings

This sub-menu provides memory timing settings for each channel of memory. This sub-menu provides memory timing settings for each channel of memory. The respective timing setting screens are configurable only when **Memory Timing Mode** is set to **Manual** or **Advanced Manual**. Note: Your system may become unstable or fail to boot after you make changes on the memory timings. If this occurs, please reset the board to default values by loading optimized defaults or clearing the CMOS values.

▸ Advanced Voltage Settings

This sub-menu allows you to set CPU, chipset and memory voltages.

▸ PC Health Status

☞ Reset Case Open Status

- ▸▸ Disabled — Keeps or clears the record of previous chassis intrusion status. (Default)
- ▸▸ Enabled — Clears the record of previous chassis intrusion status and the **Case Open** field will show "No" at next boot.

☞ Case Open

Displays the detection status of the chassis intrusion detection device attached to the motherboard CI header. If the system chassis cover is removed, this field will show "Yes", otherwise it will show "No". To clear the chassis intrusion status record, set **Reset Case Open Status** to **Enabled**, save the settings to the CMOS, and then restart your system.

☞ CPU Vcore/CPU VRIN/DRAM Voltage/+3.3V/+5V/+12V/CPU VAXG

Displays the current system voltages.

☞ CPU/System Temperature

Displays current CPU/system temperature.

☞ CPU/System Fan Speed

Displays current CPU/system fan speeds.

☞ **CPU/System Temperature Warning**

Sets the warning threshold for CPU/system temperature. When temperature exceeds the threshold, BIOS will emit warning sound. Options are: Disabled (default), 60°C/140°F, 70°C/158°F, 80°C/176°F, 90°C/194°F.

☞ **CPU/System Fan Fail Warning**

Allows the system to emit warning sound if the fan is not connected or fails. Check the fan condition or fan connection when this occurs. (Default: Disabled)

☞ **CPU Fan Speed Control**

Allows you to determine whether to enable the fan speed control function and adjust the fan speed.

- ▸▸ Normal — Allows the fan to run at different speeds according to the CPU temperature. You can adjust the fan speed with System Information Viewer based on your system requirements. (Default)
- ▸▸ Silent — Allows the fan to run at slow speeds.
- ▸▸ Manual — Allows you to control the fan speed under the **Fan Speed Percentage** item.
- ▸▸ Full Speed — Allows the fan to run at full speeds.

☞ **Fan Speed Percentage**

Allows you to control the fan speed. This item is configurable only when **CPU Fan Speed Control** is set to **Manual**. Options are: 0.75 PWM value /°C ~ 2.50 PWM value /°C.

☞ **1st System Fan Speed Control (SYS_FAN1 Connector)**

Allows you to determine whether to enable the fan speed control function and adjust the fan speed.

- ▸▸ Normal — Allows the fan to run at different speeds according to the system temperature. You can adjust the fan speed with System Information Viewer based on your system requirements. (Default)
- ▸▸ Silent — Allows the fan to run at slow speeds.
- ▸▸ Manual — Allows you to control the fan speed under the **Fan Speed Percentage** item.
- ▸▸ Full Speed — Allows the fan to run at full speeds.

☞ **Fan Speed Percentage**

Allows you to control the fan speed. This item is configurable only when **1st System Fan Speed Control** is set to **Manual**. Options are: 0.75 PWM value /°C ~ 2.50 PWM value /°C.

☞ **2nd System Fan Speed Control (SYS_FAN2 Connector)**

Allows you to determine whether to enable the fan speed control function and adjust the fan speed.

- ▸▸ Normal — Allows the fan to run at different speeds according to the system temperature. You can adjust the fan speed with System Information Viewer based on your system requirements. (Default)
- ▸▸ Silent — Allows the fan to run at slow speeds.
- ▸▸ Manual — Allows you to control the fan speed under the **Fan Speed Percentage** item.
- ▸▸ Full Speed — Allows the fan to run at full speeds.

☞ **Fan Speed Percentage**

Allows you to control the fan speed. This item is configurable only when **2nd System Fan Speed Control** is set to **Manual**. Options are: 0.75 PWM value /°C ~ 2.50 PWM value /°C.

☞ **3rd System Fan Speed Control (SYS_FAN3 Connector)**

Allows you to determine whether to enable the fan speed control function and adjust the fan speed.

- ▸▸ Normal — Allows the fan to run at different speeds according to the system temperature. You can adjust the fan speed with System Information Viewer based on your system requirements. (Default)
- ▸▸ Silent — Allows the fan to run at slow speeds.
- ▸▸ Manual — Allows you to control the fan speed under the **Fan Speed Percentage** item.
- ▸▸ Full Speed — Allows the fan to run at full speeds.

☞ **Fan Speed Percentage**

Allows you to control the fan speed. This item is configurable only when **3rd System Fan Speed Control** is set to **Manual**. Options are: 0.75 PWM value /°C ~ 2.50 PWM value /°C.

Miscellaneous Settings

PCIe Slot Configuration

Allows you to set the operation mode of the PCI Express slots to Gen 1, Gen 2, or Gen 3. Actual operation mode is subject to the hardware specification of each slot. **Auto** lets the BIOS automatically configure this setting. (Default: Auto)

DMI Gen2 Speed

Allows you to configure the DMI link speed.

- Auto — Lets the BIOS automatically configure this setting.
- Enabled — Sets the DMI link speed to Gen 2. (Default)
- Disabled — Sets the DMI link speed to Gen 1.

3DMark01 Boost

Allows you to determine whether to enhance some legacy benchmark performance. (Default: Disabled)

2-3 System Information

This section provides information on your motherboard model and BIOS version. You can also select the default language used by the BIOS and manually set the system time.

System Language

Selects the default language used by the BIOS.

System Date

Sets the system date. The date format is week (read-only), month, date, and year. Use <Enter> to switch between the Month, Date, and Year fields and use the <Page Up> or <Page Down> key to set the desired value.

System Time

Sets the system time. The time format is hour, minute, and second. For example, 1 p.m. is 13:0:0. Use <Enter> to switch between the Hour, Minute, and Second fields and use the <Page Up> or <Page Down> key to set the desired value.

Access Level

Displays the current access level depending on the type of password protection used. (If no password is set, the default will display as **Administrator**.) The Administrator level allows you to make changes to all BIOS settings; the User level only allows you to make changes to certain BIOS settings but not all.

2-4 BIOS Features

☞ Boot Option Priorities

Specifies the overall boot order from the available devices.

Removable storage devices that support GPT format will be prefixed with "UEFI:" string on the boot device list. To boot from an operating system that supports GPT partitioning, select the device prefixed with "UEFI:" string.

Or if you want to install an operating system that supports GPT partitioning such as Windows 7 64-bit, select the optical drive that contains the Windows 7 64-bit installation disk and is prefixed with "UEFI:" string.

☞ Hard Drive/CD/DVD ROM Drive/Floppy Drive/Network Device BBS Priorities ②

Specifies the boot order for a specific device type, such as hard drives, optical drives, floppy disk drives, and devices that support Boot from LAN function, etc. Press <Enter> on this item to enter the submenu that presents the devices of the same type that are connected. This item is present only if at least one device for this type is installed.

☞ Bootup NumLock State

Enables or disables Numlock feature on the numeric keypad of the keyboard after the POST. (Default: Enabled)

☞ Security Option

Specifies whether a password is required every time the system boots, or only when you enter BIOS Setup. After configuring this item, set the password(s) under the **Administrator Password/User Password** item.

- ▸▸ Setup — A password is only required for entering the BIOS Setup program.
- ▸▸ System — A password is required for booting the system and for entering the BIOS Setup program. (Default)

☞ Full Screen LOGO Show

Allows you to determine whether to display the GIGABYTE Logo at system startup. **Disabled** skips the GIGABYTE Logo when the system starts up. (Default: Enabled)

☞ Fast Boot

Enables or disables Fast Boot to shorten the OS boot process. **Ultra Fast** provides the fastest bootup speed. (Default: Disabled)

② Only for GA-H97M-D3HP.

☞ **VGA Support**

Allows you to select which type of operating system to boot.

- ▸▸ Auto — Enables legacy option ROM only.
- ▸▸ EFI Driver — Enables EFI option ROM. (Default)

This item is configurable only when **Fast Boot** is set to **Enabled** or **Ultra Fast**.

☞ **USB Support**

- ▸▸ Disabled — All USB devices are disabled before the OS boot process completes.
- ▸▸ Full Initial — All USB devices are functional in the operating system and during the POST.
- ▸▸ Partial Initial — Part of the USB devices are disabled before the OS boot process completes. (Default)

This item is configurable only when **Fast Boot** is set to **Enabled**. This function is disabled when **Fast Boot** is set to **Ultra Fast**.

☞ **PS2 Devices Support**

- ▸▸ Disabled — All PS/2 devices are disabled before the OS boot process completes.
- ▸▸ Enabled — All PS/2 devices are functional in the operating system and during the POST. (Default)

This item is configurable only when **Fast Boot** is set to **Enabled**. This function is disabled when **Fast Boot** is set to **Ultra Fast**.

☞ **NetWork Stack Driver Support**

- ▸▸ Disabled — Disables booting from the network. (Default)
- ▸▸ Enabled — Enables booting from the network.

This item is configurable only when **Fast Boot** is set to **Enabled** or **Ultra Fast**.

☞ **Next Boot After AC Power Loss**

- ▸▸ Normal Boot — Enables normal bootup upon the return of the AC power. (Default)
- ▸▸ Fast Boot — Keeps the Fast Boot settings upon the return of the AC power.

This item is configurable only when **Fast Boot** is set to **Enabled** or **Ultra Fast**.

☞ **Limit CPUID Maximum** (Note)

Allows you to determine whether to limit CPUID maximum value. Set this item to **Disabled** for Windows XP operating system; set this item to **Enabled** for legacy operating system such as Windows NT4.0. (Default: Disabled)

☞ **Execute Disable Bit** (Note)

Enables or disables Intel® Execute Disable Bit function. This function may enhance protection for the computer, reducing exposure to viruses and malicious buffer overflow attacks when working with its supporting software and system. (Default: Enabled)

☞ **Intel Virtualization Technology** (Note)

Enables or disables Intel® Virtualization Technology. Virtualization enhanced by Intel® Virtualization Technology will allow a platform to run multiple operating systems and applications in independent partitions. With virtualization, one computer system can function as multiple virtual systems. (Default: Enabled)

☞ **Intel TXT(LT) Support** (Note)

Enables or disables Intel® Trusted Execution Technology (Intel® TXT). Intel® Trusted Execution Technology provides a hardware-based security foundation. (Default: Disabled)

☞ **Dynamic Storage Accelerator** ①

Enables or disables Intel® Dynamic Storage Accelerator. When enabled, the hard drive I/O performance will be adjusted according to hard drive load. (Default: Disabled)

☞ **VT-d** (Note)

Enables or disables Intel® Virtualization Technology for Directed I/O. (Default: Enabled)

① Only for GA-Z97M-D3HP.

(Note) This item is present only when you install a CPU that supports this feature. For more information about Intel® CPUs' unique features, please visit Intel's website.

☞ Windows 8 Features

Allows you to select the operating system to be installed. (Default: Other OS)

☞ CSM Support

Enables or disables UEFI CSM (Compatibility Support Module) to support a legacy PC boot process.

- ▸▸ Always — Enables UEFI CSM. (Default)
- ▸▸ Never — Disables UEFI CSM and supports UEFI BIOS boot process only.

This item is configurable only when **Windows 8 Features** is set to **Windows 8** or **Windows 8 WHQL**.

☞ Boot Mode Selection

Allows you to select which type of operating system to boot.

- ▸▸ UEFI and Legacy — Allows booting from operating systems that support legacy option ROM or UEFI option ROM. (Default)
- ▸▸ Legacy Only — Allows booting from operating systems that only support legacy Option ROM.
- ▸▸ UEFI Only — Allows booting from operating systems that only support UEFI Option ROM.

This item is configurable only when **CSM Support** is set to **Always**.

☞ LAN PXE Boot Option ROM

Allows you to select whether to enable the legacy option ROM for the LAN controller. (Default: Disabled)

This item is configurable only when **CSM Support** is set to **Always**.

☞ Storage Boot Option Control

Allows you to select whether to enable the UEFI or legacy option ROM for the storage device controller.

- ▸▸ Disabled — Disables option ROM.
- ▸▸ Legacy only — Enables legacy option ROM only. (Default)
- ▸▸ UEFI only — Enables UEFI option ROM only.
- ▸▸ Legacy First — Enables legacy option ROM first.
- ▸▸ UEFI First — Enables UEFI option ROM first.

This item is configurable only when **CSM Support** is set to **Always**.

☞ Other PCI Device ROM Priority

Allows you to select whether to enable the UEFI or Legacy option ROM for the PCI device controller other than the LAN, storage device, and graphics controllers.

- ▸▸ Legacy OpROM — Enables legacy option ROM only.
- ▸▸ UEFI OpROM — Enables UEFI option ROM only. (Default)

This item is configurable only when **CSM Support** is set to **Always**.

☞ Network stack

Disables or enables booting from the network to install a GPT format OS, such as installing the OS from the Windows Deployment Services server. (Default: Disabled)

☞ Ipv4 PXE Support

Enables or disables IPv4 PXE Support. This item is configurable only when **Network stack** is enabled.

☞ Ipv6 PXE Support

Enables or disables IPv6 PXE Support. This item is configurable only when **Network stack** is enabled.

☞ Administrator Password

Allows you to configure an administrator password. Press <Enter> on this item, type the password, and then press <Enter>. You will be requested to confirm the password. Type the password again and press <Enter>. You must enter the administrator password (or user password) at system startup and when entering BIOS Setup. Differing from the user password, the administrator password allows you to make changes to all BIOS settings.

User Password

Allows you to configure a user password. Press <Enter> on this item, type the password, and then press <Enter>. You will be requested to confirm the password. Type the password again and press <Enter>. You must enter the administrator password (or user password) at system startup and when entering BIOS Setup. However, the user password only allows you to make changes to certain BIOS settings but not all.

To cancel the password, press <Enter> on the password item and when requested for the password, enter the correct one first. When prompted for a new password, press <Enter> without entering any password. Press <Enter> again when prompted to confirm.

NOTE: Before setting the User Password, be sure to set the Administrator Password first.

2-5 Peripherals

Initial Display Output

Specifies the first initiation of the monitor display from the installed PCI Express graphics card or the onboard graphics.

- IGFX — Sets the onboard graphics as the first display.
- PCIe 1 Slot — Sets the graphics card on the PCIEX16 slot as the first display. (Default)
- PCIe 2 Slot — Sets the graphics card on the PCIEX4 slot as the first display.

PCH LAN Controller

Enables or disables the onboard LAN function. (Default: Enabled)

If you wish to install a 3rd party add-in network card instead of using the onboard LAN, set this item to **Disabled**.

XHCI Mode

Allows you to determine the operating mode for the xHCI controller in OS.

- Smart Auto — This mode is available only when the BIOS supports the xHCI controller in the pre-boot environment. This mode is similar to **Auto**, but it adds the capability to route the ports to xHCI or EHCI according to setting used in previous boots (for non-G3 boot) in the pre-boot environment. This allows the use of USB 3.0 devices prior to OS boot. xHCI controller enabling and rerouting should follow the steps in **Auto**, when previous boot routs ports to EHCI. Note: This is the recommended mode when BIOS has xHCI pre-boot support. (Default)
- Auto — BIOS routes the sharable ports to EHCI controller. Then it uses ACPI protocols to provide an option to enable the xHCI controller and reroute the sharable ports. Note: This is the recommended mode when BIOS does NOT have xHCI pre-boot support.

- Enabled — All shared ports are eventually routed to the xHCI controller during the BIOS boot process. If BIOS does not have pre-boot support for the xHCI controller, it should initially route the sharable ports to the EHCI controller and then prior to OS boot it should route the ports to xHCI controller. Note: OS has to provide support for the xHCI controller in this mode. If the OS does not provide support, all sharable ports won't work.
- Disabled — The USB 3.0 ports are routed to the EHCI controller and the xHCI controller is turned off. All USB 3.0 devices function as High Speed devices regardless of xHCI software support/availability.

Audio Controller
Enables or disables the onboard audio function. (Default: Enabled)
If you wish to install a 3rd party add-in audio card instead of using the onboard audio, set this item to **Disabled**.

Audio LED ①
Enables or disables the onboard audio LED. (Default: Enabled)

Intel Processor Graphics
Enables or disables the onboard graphics function. (Default: Enabled)

Intel Processor Graphics Memory Allocation
Allows you to set the onboard graphics memory size. Options are: 32M~512M. (Default: 64M)

DVMT Total Memory Size
Allows you to allocate the DVMT memory size of the onboard graphics. Options are: 128M, 256M, MAX. (Default: MAX)

Intel(R) Rapid Start Technology
Enables or disables Intel® Rapid Start Technology. (Default: Disabled)

Legacy USB Support
Allows USB keyboard/mouse to be used in MS-DOS. (Default: Enabled)

XHCI Hand-off
Determines whether to enable XHCI Hand-off feature for an operating system without XHCI Hand-off support. (Default: Enabled)

EHCI Hand-off
Determines whether to enable EHCI Hand-off feature for an operating system without EHCI Hand-off support. (Default: Disabled)

USB Storage Devices
Displays a list of connected USB mass storage devices. This item appears only when a USB storage device is installed.

Two Layer KVM Switch
Set to **Enabled** to ensure proper device functionality when chaining two KVM switches. (Default: Disabled)

PCIE Slot Configuration (PCH)
Specifies the operating bandwidth for the PCIEX4 slot.
- Auto — Lets the BIOS automatically configure this setting depending on the expansion card being installed. (Default)
- x1 — PCIEX4 operates at x1 mode.
- x4 — PCIEX4 operates at x4 mode.

SATA Configuration

Integrated SATA Controller
Enables or disables the integrated SATA controllers. (Default: Enabled)

① Only for GA-Z97M-D3HP.

☞ **SATA Mode Selection**

Enables or disables RAID for the SATA controllers integrated in the Chipset or configures the SATA controllers to AHCI mode.

- IDE — Configures the SATA controller to IDE mode.
- RAID — Enables RAID for the SATA controller.
- AHCI — Configures the SATA controllers to AHCI mode. Advanced Host Controller Interface (AHCI) is an interface specification that allows the storage driver to enable advanced Serial ATA features such as Native Command Queuing and hot plug. (Default)

☞ **SATA Express SRIS capabilities**

Enables or disables SATA Express SRIS (Separate Reference Clocks with Independent SSC) mode. (Default: Auto)

▶ Serial ATA Port 0/1/2/3/4/5

☞ **Port 0/1/2/3/4/5**

Enables or disables each SATA port. (Default: Enabled)

☞ **Hot plug**

Enables or disable the hot plug capability for each SATA port. (Default: Disabled)

☞ **External SATA**

Enables or disables support for external SATA devices. (Default: Disabled)

▶ Super IO Configuration

This section provides information on the super I/O chip and allows you to configure the serial port and parallel port.

☞ **Serial Port A**

Enables or disables the onboard serial port. (Default: Enabled)

☞ **Parallel Port**

Enables or disables the onboard parallel port. (Default: Enabled)

▶ Device Mode

This item is configurable only when **Parallel Port** is set to **Enabled**. Selects an operating mode for the onboard parallel (LPT) port. Options are: Standard Parallel Port Mode (Default), EPP Mode (Enhanced Parallel Port), ECP Mode (Extended Capabilities Port), EPP Mode & ECP Mode.

▶ Intel(R) Smart Connect Technology

☞ **ISCT Support**

Enables or disables Intel® Smart Connect Technology. (Default: Disabled)

▶ Intel(R) Ethernet Network Connection

This sub-menu provides information on LAN configuration.

2-6 Power Management

☞ Power Loading

Enables or disables dummy load. When the power supply is at low load, a self-protection will activate causing it to shutdown or fail. If this occurs, please set to **Enabled**. **Auto** lets the BIOS automatically configure this setting. (Default: Auto)

☞ Resume by Alarm

Determines whether to power on the system at a desired time. (Default: Disabled)

If enabled, set the date and time as following:

- Wake up day: Turn on the system at a specific time on each day or on a specific day in a month.
- Wake up hour/minute/second: Set the time at which the system will be powered on automatically.

Note: When using this function, avoid inadequate shutdown from the operating system or removal of the AC power, or the settings may not be effective.

☞ Wake on LAN

Enables or disables the wake on LAN function. (Default: Enabled)

☞ Soft-Off by PWR-BTTN

Configures the way to turn off the computer in MS-DOS mode using the power button.

- Instant-Off — Press the power button and then the system will be turned off instantly. (Default)
- Delay 4 Sec. — Press and hold the power button for 4 seconds to turn off the system. If the power button is pressed for less than 4 seconds, the system will enter suspend mode.

☞ RC6(Render Standby)

Allows you to determine whether to let the onboard graphics enter standby mode to decrease power consumption. (Default: Enabled)

☞ AC BACK

Determines the state of the system after the return of power from an AC power loss.

- Memory — The system returns to its last known awake state upon the return of the AC power.
- Always On — The system is turned on upon the return of the AC power.
- Always Off — The system stays off upon the return of the AC power. (Default)

☞ Power On By Keyboard

Allows the system to be turned on by a PS/2 keyboard wake-up event.

Note: To use this function, you need an ATX power supply providing at least 1A on the +5VSB lead.

- ▸▸ Disabled — Disables this function. (Default)
- ▸▸ Password — Set a password with 1~5 characters to turn on the system.
- ▸▸ Keyboard 98 — Press POWER button on the Windows 98 keyboard to turn on the system.
- ▸▸ Any Key — Press any key to turn on the system.

☞ Power On Password

Set the password when **Power On By Keyboard** is set to **Password**.

Press <Enter> on this item and set a password with up to 5 characters and then press <Enter> to accept. To turn on the system, enter the password and press <Enter>.

Note: To cancel the password, press <Enter> on this item. When prompted for the password, press <Enter> again without entering the password to clear the password settings.

☞ Power On By Mouse

Allows the system to be turned on by a PS/2 mouse wake-up event.

Note: To use this function, you need an ATX power supply providing at least 1A on the +5VSB lead.

- ▸▸ Disabled — Disables this function. (Default)
- ▸▸ Move — Move the mouse to turn on the system.
- ▸▸ Double Click — Double click on left button on the mouse to turn on the system.

☞ ErP

Determines whether to let the system consume least power in S5 (shutdown) state. (Default: Disabled)

Note: When this item is set to **Enabled**, the following functions will become unavailable: Resume by Alarm, PME event wake up, power on by mouse, power on by keyboard, and wake on LAN.

☞ Platform Power Management

Enables or disables the Active State Power Management function (ASPM). (Default: Disabled)

☞ PEG ASPM

Allows you to configure the ASPM mode for the device connected to the CPU PEG bus. **Auto** lets the BIOS automatically configure this setting. This item is configurable only when **Platform Power Management** is set to **Enabled**. (Default: Auto)

☞ PCIe ASPM

Allows you to configure the ASPM mode for the device connected to Chipset's PCI Express bus. **Auto** lets the BIOS automatically configure this setting. This item is configurable only when **Platform Power Management** is set to **Enabled**. (Default: Auto)

☞ CPU DMI Link ASPM Control

Allows you to configure the ASPM mode for the CPU side of the DMI link. **Auto** lets the BIOS automatically configure this setting. This item is configurable only when **Platform Power Management** is set to **Enabled**. (Default: L0sL1)

☞ PCH DMI Link ASPM Control

Allows you to configure the ASPM mode for both CPU side and Chipset side of the DMI link. **Auto** lets the BIOS automatically configure this setting. This item is configurable only when **Platform Power Management** is set to **Enabled**. (Default: Enabled)

2-7 Save & Exit

☞ Save & Exit Setup

Press <Enter> on this item and select **Yes**. This saves the changes to the CMOS and exits the BIOS Setup program. Select **No** or press <Esc> to return to the BIOS Setup Main Menu.

☞ Exit Without Saving

Press <Enter> on this item and select **Yes**. This exits the BIOS Setup without saving the changes made in BIOS Setup to the CMOS. Select **No** or press <Esc> to return to the BIOS Setup Main Menu.

☞ Load Optimized Defaults

Press <Enter> on this item and select **Yes** to load the optimal BIOS default settings. The BIOS defaults settings help the system to operate in optimum state. Always load the Optimized defaults after updating the BIOS or after clearing the CMOS values.

☞ Boot Override

Allows you to select a device to boot immediately. Press <Enter> on the device you select and select **Yes** to confirm. Your system will restart automatically and boot from that device.

☞ Save Profiles

This function allows you to save the current BIOS settings to a profile. You can create up to 8 profiles and save as Setup Profile 1~ Setup Profile 8. Press <Enter> to complete. Or you can select **Select File in HDD/USB/FDD** to save the profile to your storage device.

☞ Load Profiles

If your system becomes unstable and you have loaded the BIOS default settings, you can use this function to load the BIOS settings from a profile created before, without the hassles of reconfiguring the BIOS settings. First select the profile you wish to load and then press <Enter> to complete. You can select **Select File in HDD/USB/FDD** to input the profile previously created from your storage device or load the profile automatically created by the BIOS, such as reverting the BIOS settings to the last settings that worked properly (last known good record).

Chapter 3 Appendix

3-1 Configuring SATA Hard Drive(s)

Before you begin, please prepare the following items:

- At least two SATA hard drives (to ensure optimal performance, it is recommended that you use two hard drives with identical model and capacity). If you do not want to create RAID, you may prepare only one hard drive.
- Windows setup disk.
- Motherboard driver disk.
- A USB flash drive.

Configuring the Onboard SATA Controller

A. Installing SATA hard drive(s) in your computer

Attach one end of the SATA signal cable to the rear of the SATA hard drive and the other end to available SATA port on the motherboard. Then connect the power connector from your power supply to the hard drive.

B. Configuring SATA controller mode in BIOS Setup

Make sure to configure the SATA controller mode correctly in system BIOS Setup. For the BIOS Setup menus, refer to Chapter 2, "BIOS Setup," "Integrated Peripherals."

Steps:

1. Turn on your computer and press <Delete> to enter BIOS Setup during the POST (Power-On Self-Test). Go to **Peripherals\SATA Configuration**, make sure **Integrated SATA Controller** is enabled. To create RAID, set **SATA Mode Selection** to **RAID**. If you do not want to create RAID, set this item to **IDE** or **AHCI**.
2. If you want to configure UEFI RAID, follow the steps in "C-1." To enter the legacy RAID ROM, save the settings and exit BIOS Setup. Refer to "C-2" for more information.

The BIOS Setup menus described in this section may differ from the exact settings for your motherboard. The actual BIOS Setup menu options you will see shall depend on the motherboard you have and the BIOS version.

C-1. UEFI RAID Configuration

Only Windows 8.1/8 64-bit supports UEFI RAID configuration.

Steps:

1. After you set the SATA controller to RAID mode, go to **BIOS Features** and set **Windows 8 Features** to **Windows 8** and **CSM Support** to **Never**. Save the changes and exit BIOS Setup.
2. After the system reboot, enter BIOS Setup again. Then enter the **Peripherals\Intel(R) Rapid Storage Technology** sub-menu.
3. On the **Intel(R) Rapid Storage Technology** menu, press <Enter> on **Create RAID Volume** to enter the **Create RAID Volume** screen. Enter a volume name with 1~16 letters (letters cannot be special characters) under the **Name** item and press <Enter>. Then, select a RAID level. RAID levels supported include RAID 0, RAID 1, Recovery, RAID 10, and RAID 5 (the selections available depend on the number of the hard drives being installed). Next, use the down arrow key to move to **Select Disks**.
4. Under **Select Disks** item, select the hard drives to be included in the RAID array. Press the <Space> key on the hard drives to be selected (selected hard drives are marked with "X"). Then set the stripe block size. The stripe block size can be set from 4 KB to 128 KB. Once you have selected the stripe block size, set the volume capacity.
5. After setting the capacity, move to **Create Volume** and press <Enter> to begin
6. After completing, you'll be brought back to the **Intel(R) Rapid Storage Technology** screen. Under **RAID Volumes** you can see the new RAID volume. To see more detailed information, press <Enter> on the volume to check for information on RAID level, stripe block size, array name, and array capacity, etc.

C-2. Configuring Legacy RAID ROM

Enter the Intel® legacy RAID BIOS setup utility to configure a RAID array. Skip this step and proceed with the installation of Windows operating system for a non-RAID configuration.

Steps:

1. After the POST memory test begins and before the operating system boot begins, look for a message which says "Press <Ctrl-I> to enter Configuration Utility". Press <Ctrl> + <I> to enter the RAID Configuration Utility.
2. After you press <Ctrl> + <I>, the **MAIN MENU** screen will appear. If you want to create a RAID array, select **Create RAID Volume** in **MAIN MENU** and press <Enter>.
3. After entering the **CREATE VOLUME MENU** screen, enter a volume name with 1~16 letters (letters cannot be special characters) under the **Name** item and press <Enter>. Then, select a RAID level. RAID levels supported include RAID 0, RAID 1, Recovery, RAID 10, and RAID 5 (the selections available depend on the number of the hard drives being installed). Press <Enter> to proceed.
4. Under **Disks** item, select the hard drives to be included in the RAID array. If only two hard drives are installed, they will be automatically assigned to the array. Set the stripe block size if necessary. The stripe block size can be set from 4 KB to 128 KB. Once you have selected the stripe block size, press <Enter>.
5. Enter the array capacity and press <Enter>. Finally press <Enter> on the **Create Volume** item to begin creating the RAID array. When prompted to confirm whether to create this volume, press <Y> to confirm or <N> to cancel.
6. When completed, you can see detailed information about the RAID array in the **DISK/VOLUME INFORMATION** section, including the RAID level, stripe block size, array name, and array capacity, etc. To exit the RAID BIOS utility, press <Esc> or select **6. Exit** in **MAIN MENU**.

Installing the SATA RAID/AHCI Driver and Operating System

With the correct BIOS settings, you are ready to install the operating system.

Installing the Operating System

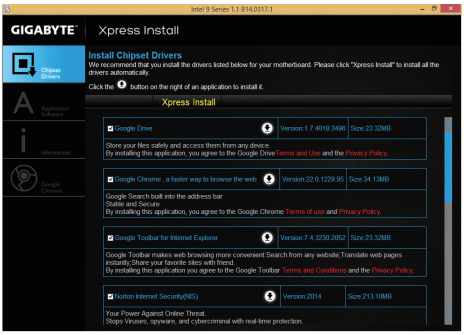
As Windows 7 already includes Intel® SATA RAID/AHCI driver, you do not need to install separate RAID/AHCI driver during the Windows installation process. After the operating system is installed, we recommend that you install all required drivers from the motherboard driver disk using "Xpress Install" to ensure system performance and compatibility. To install Windows 8.1/8, refer to the steps below: Steps:

1. Copy the **IRST** folder under **BootDrv** in the driver disk to your USB thumb drive.
2. Boot from the Windows 8.1/8 setup disk and perform standard OS installation steps. When the screen requesting you to load the driver appears, select **Browse**.
3. Insert the USB thumb drive and then browse to the location of the driver. The locations of the drivers are as follows:
   Windows 32-bit: \iRST\32Bit
   Windows 64-bit: \iRST\64Bit
4. When a screen as shown, select **Intel(R) Desktop/Workstation/Server Express Chipset SATA RAID Controller** and click **Next** to load the driver and continue the OS installation.

3-2 Drivers Installation

- Before installing the drivers, first install the operating system. (The following instructions use Windows 8.1 as the example operating system.)
- After installing the operating system, insert the motherboard driver disk into your optical drive. Click on the message "Tap to choose what happens with this disc" on the top-right corner of the screen and select "Run **Run**.exe." (Or go to My Computer, double-click the optical drive and execute the Run.exe program.)

"Xpress Install" will automatically scan your system and then list all of the drivers that are recommended to install. You can click the **Xpress Install** button and "Xpress Install" will install all of the selected drivers. Or click the arrow icon to individually install the drivers you need.



For more software information, please visit GIGABYTE's website.

Regulatory Statements

Regulatory Notices

This document must not be copied without our written permission, and the contents there of must not be imparted to a third party nor be used for any unauthorized purpose.
Contravention will be prosecuted. We believe that the information contained herein was accurate in all respects at the time of printing. GIGABYTE cannot, however, assume any responsibility for errors or omissions in this text. Also note that the information in this document is subject to change without notice and should not be construed as a commitment by GIGABYTE.

Our Commitment to Preserving the Environment

In addition to high-efficiency performance, all GIGABYTE motherboards fulfill European Union regulations for RoHS (Restriction of Certain Hazardous Substances in Electrical and Electronic Equipment) and WEEE (Waste Electrical and Electronic Equipment) environmental directives, as well as most major worldwide safety requirements. To prevent releases of harmful substances into the environment and to maximize the use of our natural resources, GIGABYTE provides the following information on how you can responsibly recycle or reuse most of the materials in your "end of life" product.

Restriction of Hazardous Substances (RoHS) Directive Statement

GIGABYTE products have not intended to add and safe from hazardous substances (Cd, Pb, Hg, Cr+6, PBDE and PBB). The parts and components have been carefully selected to meet RoHS requirement. Moreover, we at GIGABYTE are continuing our efforts to develop products that do not use internationally banned toxic chemicals.

Waste Electrical & Electronic Equipment (WEEE) Directive Statement

GIGABYTE will fulfill the national laws as interpreted from the 2002/96/EC WEEE (Waste Electrical and Electronic Equipment) directive. The WEEE Directive specifies the treatment, collection, recycling and disposal of electric and electronic devices and their components. Under the Directive, used equipment must be marked, collected separately, and disposed of properly.

WEEE Symbol Statement

The symbol shown below is on the product or on its packaging, which indicates that this product must not be disposed of with other waste. Instead, the device should be taken to the waste collection centers for activation of the treatment, collection, recycling and disposal procedure. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment.
For more information about where you can drop off your waste equipment for recycling, please contact your local government office, your household waste disposal service or where you purchased the product for details of environmentally safe recycling.

- When your electrical or electronic equipment is no longer useful to you, "take it back" to your local or regional waste collection administration for recycling.
- If you need further assistance in recycling, reusing in your "end of life" product, you may contact us at the Customer Care number listed in your product's user's manual and we will be glad to help you with your effort.

Finally, we suggest that you practice other environmentally friendly actions by understanding and using the energy-saving features of this product (where applicable), recycling the inner and outer packaging (including shipping containers) this product was delivered in, and by disposing of or recycling used batteries properly. With your help, we can reduce the amount of natural resources needed to produce electrical and electronic equipment, minimize the use of landfills for the disposal of "end of life" products, and generally improve our quality of life by ensuring that potentially hazardous substances are not released into the environment and are disposed of properly.

FCC Notice (U.S.A. Only)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult a dealer or experienced TV/radio technician for help.

Canada, Industry Canada (IC) Notices / Canada, avis d'Industry Canada (IC)

- This Class B digital apparatus complies with Canadian ICES-003 and RSS-210.
- Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.
- Cet appareil numérique de classe B est conforme aux normes canadiennes ICES-003 et RSS-210.
- Son fonctionnement est soumis aux deux conditions suivantes : (1) cet appareil ne doit pas causer d'interférence et (2) cet appareil doit accepter toute interférence, notamment les interférences qui peuvent affecter son fonctionnement.

Contact Us

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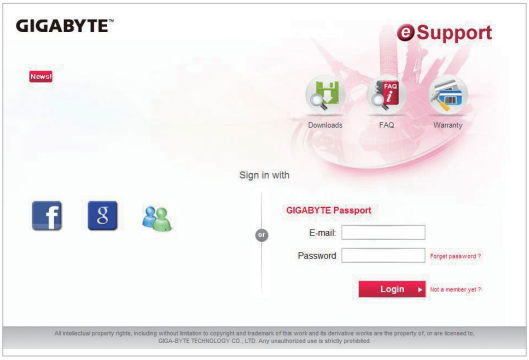
You may go to the GIGABYTE website, select your language in the language list on the top right corner of the website.

- **GIGABYTE eSupport**

  To submit a technical or non-technical (Sales/Marketing) question, please link to:
  http://esupport.gigabyte.com